



FIG. 1

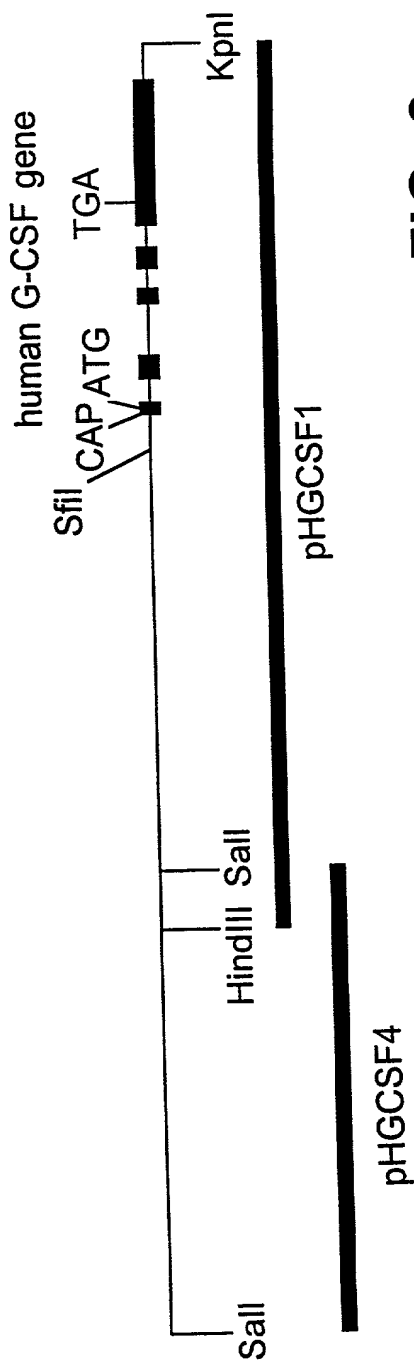


FIG. 2

-6597 Sall (-6596) GTGACCTGC AGTCAACGG ATCACTTGAG GACAGTAGTT CAAGACCAGC CTGGGCAGCA TAGGGAGACT GTCTCTACGA AAAATCAAAA AATATATGGC  
 -6497 GGGCATGGTG GCTCACGTCT GTAATCCCTG AACTTTGGGA CATCAAGGCA AGTGGATCAC TTGAGGTCAG GAGTTCGAGA CTAGCCTGGC CAACATGGTG  
 -6397 AAACCTTATC TCCACTAATAA AATACAAAAA AGTGAGCTGA GATCAGACCA TTAGCCAGGC ATGGTGGCAG GCACCTGTAA TCCCGGTAC TCAGGAGGCT GAGGCAGGAG AATCACTTGA  
 -6297 ACCCAGGAGG CGGAGGTTGC AGTGAGCTGA TAGTCTCAGC GCAACAGAGA GAGACCTCTG AATGATCCAG ATGATCACTA AAAAATAAAA AAAAAATAAA  
 -6197 AAATTAGCCA GGCATGGTAG TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC TCCAGCCTGC  
 -6097 CCAAGATCAT GCCACTACAC CATACTACTA TGTATATAGT TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA  
 -5997 CTGGTCCATA CATACTACTA TGTATATAGT TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA  
 -5897 CTGCCCCTGC TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA  
 -5797 AAATAATCTT TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA TTTTAAATAA  
 -5697 GGTGGGCAGA TCACCTTGAG TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA  
 -5597 TGCACACCTG TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA  
 -5497 CCAGCCTGGG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG TGACAGAGTG  
 -5397 TACTTCTGCT TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA  
 -5297 GTTTTTTTTT TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA TCACTTGAGA  
 -5197 GTGGGAGGGG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG AAGCTGCCAG  
 -5097 CCCCTGTCAG ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA ATCACTTGGA  
 -4997 TCTCCCCATG TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA TGGGGCTGAA  
 -4897 GATGATCTAA CTGCAAAATCC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC TACCTGGCTC  
 -4797 CACCAGTTGG TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT TTGACAGGAT  
 SphI (-4693)  
 -4697 ACAGCATGCC GGCAGTCTTC ACAGCCTCTG TTCTGCTCTCG GCGCTCTCTC TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT  
 -4597 TGCACCTGTT GAGCCCCCTT CTGGGCTGGC CAAGGCCAGA GCGGCTCTCC TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT TCGCTTGGCT  
 -4497 GCGCACGGCG CTITGGGGCC AGCTGGAGTT CCGGGTGGGC GTGGGCTTGG CCGGCCCCCG ACTCGGAGCA GCGGGCCAGC CCTGCCAGGC CCCGGGCAAT  
 SmaI (-4406)  
 -4497 GCGCACGGCG CTITGGGGCC AGCTGGAGTT CCGGGTGGGC GTGGGCTTGG CCGGCCCCCG ACTCGGAGCA GCGGGCCAGC CCTGCCAGGC CCCGGGCAAT

FIG. 3A

-4397 GAGAGGCTTA GCACCCGGG CAGCGGCTGC GGAGGTGTA CTGGGTGCC CAGAGTGCC AGCCCGCCG CGCTGTGCTC GCTCGATTTC TCACTGGGGC  
 -4297 TTAGCAGCCT TCCCGCGGG CAGGGCTCGG GACTGTCAGC CCGCATGCC TGAGCCTCCC CTCCATGGGC TCCTGTGCGG CCCGAGCCTC CCCGACGAGC  
 -4197 ACCACCCCT GCTCCACAGC GCCCAGTCCC ATCGACCAGC CAAGGGCTGA GAAAGTCGGG CCGACGGCAC CGGACTGCG AGGACGTAC CCCTGCAGCC  
 -4097 CTGGTGGGA ATCCACTGGG TGAAGCCAGC TGGGCTCCTG AGTCTGGTG AGACTTGGAG AACTTTATG TCTAGCTCAG GGATCGTAAA TACACCAATC  
 -3997 AGCACCCCTGT GTCTAGCTCA GGTCTGTGA ATGACCAAT ATGACCTCAG CCACACTCAG TATCTAGCTA CTCTGATGGG GCTTGGGA ACCTTTATG CTAGCTCAGG  
 -3897 GATTGTAAAT ACACCAATCG GCACTCTGTA TCTAGCTCAA GGTGTGAAA CACACCAATC AGCACCTGT GTCTAGCTCA GGTATGTGA ATGACCAAT  
 (-3722) HindIII  
 -3797 CGACAGTCTG TATCTGGCTA CTTTCATGGG CATCCGTGTG AAGAGACCAC CAAACAGGCT TTGTGTGAGC AATAAGCTT CTATCACCTG GGTGCAGGTG  
 -3697 GCTGAGTCC GAAAGAGAG TCAGGGAAGG AGATAAGGT GGGCCGTTT TATAGGATTT GGTAGGTAA AGGAAATTA CAGTCAAAG GGTGTGTTT  
 -3597 TCTGGCCGG CAGGAGTGG GGTGCGAAG GTGCTCAGT GGGTGTCTT TTGAGCCAGG ATGAGCCAGG AAAGGACTT TCACAAGGTA ATGTCATCAA  
 -3497 TTAAGGCAAG GACCCGCCAT TTACAGCTCT TTTGTGTGG AATGTCATCA GTTAAGTTTC GGGCAGGGC ATATTCACTT CTTTGTGAT TCTTCAGTTA  
 -3397 CTTCAGGCCA TCTGGGCGTA TATGTGAAG TTACAGGGGA TGGGATGGCT TGGCTTGGGC TCAGAGGCTT GACAGCTACT CTGGTGGGC CTTGGAGAAAT  
 (-3290) SalI  
 -3297 GTTGTGTG ACACCTCTGTA TCTAGTTAAT CTAGTGGGA CGTGGAGAAC CTTGTGTCT AGCTCAGGGA TTGTAAAGC GCTGTGCAA GGCCTGTCAA  
 -3197 AACAGACCAC TCGGCTCTAC CAATCAGCAG GATGTGGTG GGGCCAGATA AGAGAATAAA AGCAGGCTGC CCGAGCCAGC AGTGCAACC GTACAGTTCC  
 -3097 CTATCCACAA TATGGCAGCT TTGTTCTTTT GCTGTGTGG ACTAATCTTG CTACTGCTCG CTTTGTGGT CCACACTGCT TTTATGAGCT GTAACACTCA  
 -2997 CCACGAAGGT CTGCAGCTTC ACTCCTGAAG CCACCTAAGC CACGAGCCCA CCGGAGGAAT GAACAACTCC GAACTGCGT GGCCTGAGC TATAACACTC  
 -2897 ACCGGAAGG TCTGCAGCTT CACTCCTCAG CACTGCGAGG GTCCGCGGT TCCTTCTTGA GAACTGCGA ACCAAGCACT CACCAGTTTC GGACACAAAGC  
 -2797 CAGATGCACC ACCTTAAGAG CTGTAACACT CTGTCGAGG CCTCTCTGCA AAAAAAAA AATTACAAA AATTGCGGTA GTCGGTGGTC CGTGGCCTGT  
 -2697 CCAGGAGTTT GAGATCAGCC TGGGCAACAT GATGAAATGC GATGAAATGC GGTGAAGACT GGTGAAGACT GCAGTGAGCT GTGATGTGAC CACAGCCTC TAGGCTGGGG  
 -2597 GGTCCAGCT ACGCGGAGG TAAAGTTGGG AGGATCGCTT GAGCCTGGGA CAAAGAGGTG AATAAGAGGT CCTGATATGG CTAGGTGCG TGGCTCATGC CTGTAATCCC  
 -2497 GACAGACTGA GACCTGTCTT CCCCTCCGCA AAAAAATGA CAAAGAGTGA GACCAAGCTG GCCAACATGG AGAAAGCCCA TCTCTTCTAA AATAACAAAA  
 -2397 AGCACTTTGG GAAGCCGAGG CCGGCGGCTC ACCTAAGGTC AGAGTGTGA GACCAGCCTG GCGAACATGG GCGGAGGAGG ATCAGTTGAA CCCAGGAGG GCGGTTGCA  
 (-2269) SphI  
 -2297 TTAGCCGGCT GTGGGGGCG TGCTGGAGCA TGCTGTAAAT CCCAGCTACT CAGGAGGCTG AGGCAGGAGA AGGCAGGAGG ATCAGTTGAA CCCAGGAGG GCGGTTGCA  
 -2197 GTGAGCCGAG ATCTGTCCAT TGCATCCAC CCCTCCAGC CTGGGCAACA AGAGCCAAAC TCTGTCTTAA AAAAAAAA AAAGTGCCTG ACATATAAGA  
 -2097 GGTGTGCAAT GCATAGTTGC CAGGCAACAT GTTTAAGAAAT GTGGAGCTCC TGCTTCCAT GGTCTGTAA AAAAAACC ACCAACATGG TGAATATCCCA  
 -1997 CTATAGCCTA TAATCCAGC ACTTTGGAG GCGGAGGCGG GTGATCACC TGAGTCAAG AGTTCGAGAC CAGCCTGACC ACCAACATGG TGAATATCCCA

FIG. 3B

-1897 CCCTCTACTTAA AATACAAAA TTAGATGAGC ATGTGTGTGC ATGCTGTATA SphI (-1858) TCCACCTAC TGGGAGGCTG AGGCAGGAA: ATCACTAGAA CCAGGAGGC  
 -1797 GGAGGTGTGA GTGAGCCGAG ATCTGTCCAT TGCACCTCCAG CCTGAGCAAT GAGCGAACT CCATCTCAA AAAACAACA: CA:AAACCCA CTCTCTACTC  
 -1697 CAGGAGCTG GGTACAGAGC TGGGCCACAT CAGTCAAGG TGCTGAGCCA CAGAGCTAAG GGCACGTGCA GGCACCGGA CCAGATAACA GTGTGTAGA  
 -1597 TCAGTGTGTG AGATCAGAGC TCCCTGCCAT TGGTGAACAC CAGGGGCC CCAAGCACCA GAGATGGCC CATCCAGTCA CCACATCCAC TTCTCATCCA  
 -1497 GAGATGTCTG TTCTTTGGCA CGCTGGGTA AATTAGGACA GAAGTGACA GTCTTGGGTG TGTTCAGTCA GACTGCCCA GGCAGGCTT GTGGCTGTAG  
 -1397 AAAACGTTCA GGCCTAGCG CGCTAGGCT CACGCTGTATA ATCCAGCAC TTTTGGAGG CGAGGGGGT GGATCACGAG GTCAGGAGAT CGTGACCATC  
 -1297 CTGGCTAACA CGGTGAAC CGGTCTCTAC TAAATAACA AAAATTTGG CCGGATGGT GCGGGGCACC TGTAGTTCCA GCTACTCGG AGGCTGAGGC  
 -1197 AGGAGATGG GTGAACCGA GAGGAGAT TTGCAGTAG CCGACTGCAC TCCAGCCTGG GGCACAGAG AAGACTCCAT CTGGAAGA  
 -1097 AAAGAAAC GTTCAGGTCT GAGCCAGAG CCCAGGCTGT AATCTGTCA CTTACCATGA CCTTGGCAA TGGGSCAGTT TCCCTCTCT: CACCCAGCC CGTGTCCACT  
 -997 TTGGAATCGA CTCCAAGTC CCTTCCAGCA TTAAAGCTGC ATGTTTCTAA GATGAGAAGA GCGCTTGGGA CCCTACTGTC AGGTCTGTC ACAGGAGGT GAAGTTCAGG  
 -897 TCAAGGTGAA TGACCCAGGA AGTCACGTGT CCCAATCCG CAGTTCCAAA GCGCTTGGGA TTCTCTTGGC TCTACCGGAT TCTAGGGCT: TAGCCGAATG AGTCATGGGG  
 -797 TGAGCCAATC GCTTCGAAG GCTTTGCCCTC ATTCCGGACA GACATCCGGT TTCTCTTGGC TCTACCGGAT TCTAGGGCT: TAGCCGAATG AGTCATGGGG  
 -697 GCGGGGGTT TCTGGGGAGT TCCAGCTAA TCAACTTGA CAGACAGCTT GGAACTTTCG ATGGTGCCTA TCCAAGTGTG GGTGGGCAC AGCAGCCAAAG  
 -597 ACCCAATGC CTTATCTCAG GTAGGGGCTC AGGAGTCTC CCAGACAGC AGCTTCCGA AGTTTGGGG GTAGGAATGG GAGCAACCAG GCTTCTTTT  
 -497 TTCCTCTCTTA GAATTGGGG GCTTGGGGA CAGGCTTGAG AATCCCAAAG GAGAGGGGA AAGGACACTC CCCCACAA: CTGCCAGAGC GAGAGAGGA  
 -397 GACCCCGACT CAGCTGCCAC TTCCCCACAG GCCTCTGCCG CTTCCAGGG TCTATCAGCG GCTCAGCCTT TGTTCAGCTG TCTGTTCAA ACACCTCTGG  
 -297 GCCATTACAG CCTGGGTGG GCAGCGGGAG GAAGGGAGTT TGAGGGGGG, AAGGCGAGT CAAAGGAGGA TCAGAGATTC CACAATTCA CAAAACTTTC  
 -197 GCAACAGCT TTTTGTTC A:CCCCCTGC ATGTCTTTG ACACCAAT TGCATAATC CTGGGAAGTT AITACTAAGC CTTAGTCTG GCCCCAGTA  
 -97 ATTTCTCTCC AGGCTCCAT GGGTTATGT ATAAAGGGC CCTAGAGCT GGGCCCCAAA ACAGCCCGGA GCCTGCAGCC CAGCCCCACC CAGACCCATG  
 TATA box (-67) CAP (-34) ATG (1)  
 intron 1 (41) 1►Met

4 GCTGGACCTG CCACCCAGAG CCCCATGAAG CTGATGGGTG AGTGTCTTGG CCCAGGATG (SEQ ID NO: 1)

2►AlaGlyProA laThrGlnSe rProMetLys LeuMet (SEQ ID NO: 2)

FIG. 3C

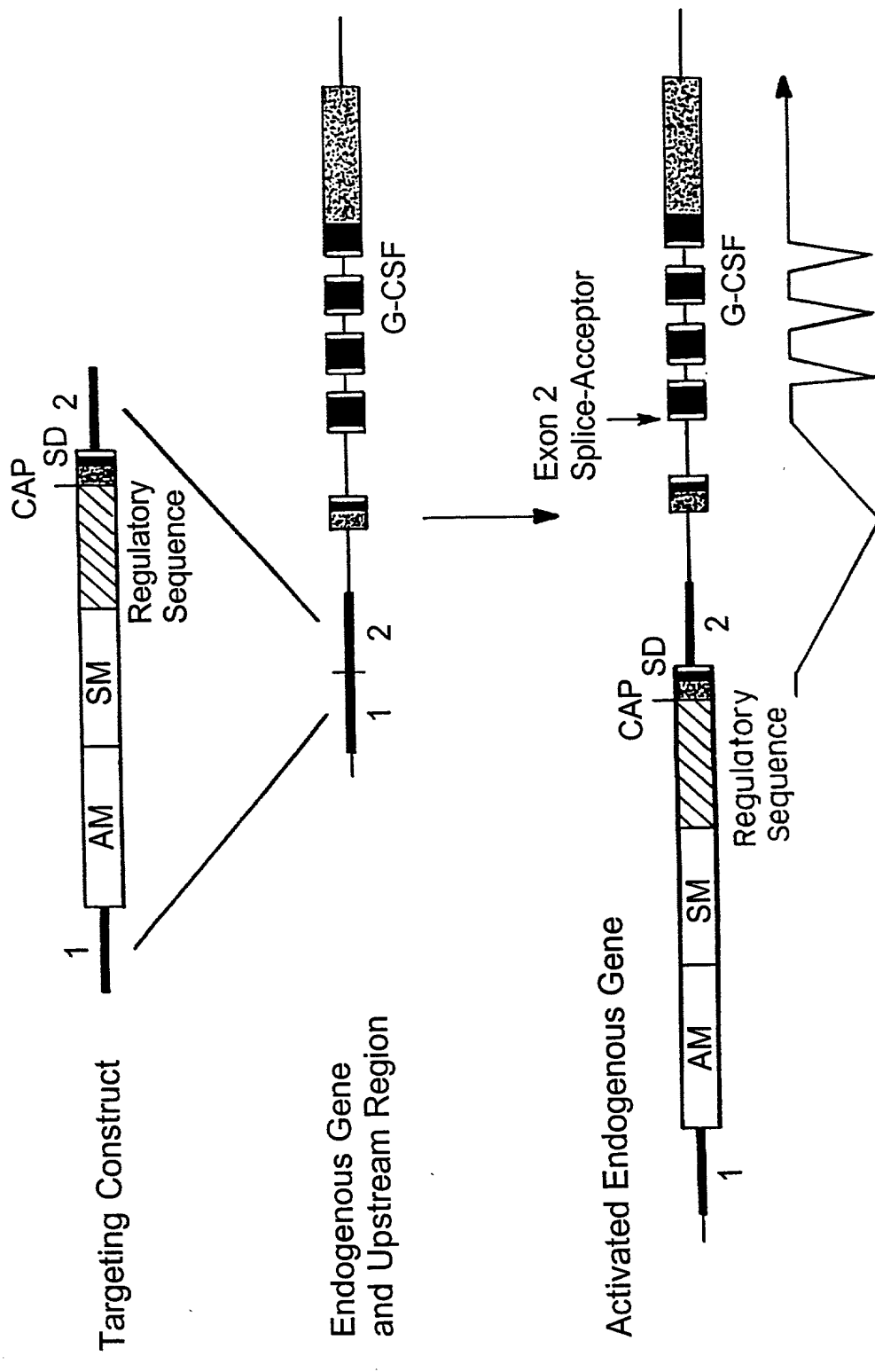


FIG. 4

GATCACTTGAGGACAGTAGTTCAAGACCAGCCTGGGCAGCATAGGGAGACTGTCTCTACGAAAAA  
 TCAAAAAATTATGGCCGGGCATGGTGGCTCACGTCTGTAATCCCTGAACTTTGGGACATCAAGGC  
 AAGTGGATCACTTGAGGTCAGGAGTTCGAGACTAGCCTGGCCAACATGGTGAAACCCTATCTCCA  
 CTAAAAAATACAAAAATTAGCCAGGCATGGTGGCAGGCACCTGTAATCCCGGCTACTCAGGAGGC  
 TGAGGCAGGAGAATCACTTGAACCCAGGAGGCGGAGGTTGCAGTGAGCTGAGATCACACCACTGC  
 ACTCCAGCCTGGGTGACAGAGCAAGACTCTATCTCAAAAAAATAAAAAAATAAAAAATTAGCC  
 AGGCATGGTAGTGACACACCTCTAGTCTCAGCTACTCAGGAGGCTGAGGTGGGAGGATCACTTGAA  
 CCTGGGGCAGTCAAGGCTACAGTGAGCCAAGATCATGCCACTACACTCCAGCCTGGGCAACAGAG  
 AGAGACCCTGTCTCTAAAAAATAATAATAATAAGAAAAAACAGCTCTGTTTATGTCTCCTGG  
 TCCATACATACTACTATGTATATAGTTTGCAAACCTCAAAGATCCAGATAGTCAATTTTTTAGGCT  
 TGTGGGCCGTATGGTCTCTGTCAACATCACTCTGCCCTGTCTTCTAGCACAAAAGCAGCTATAA  
 ACAATACATACATGAATTTTTTATAGACATCGAGATTTGAATTTTATATGATTTTTTACATTTTAT  
 AAAATAATCTTTTTAAAAATTTTCCCCTAACCATTTAAAAGTGTAAGCCGGCCAGGGCGCCAT  
 CGTCACGCCTGTAATTCAGCACTTTGGGAGGCTGAGGTGGGCAGATCACTTGAGATCAACAGTT  
 CGAGACCAGCCTGGCCAACATAGCAAAACCCCATTTCTACTAAAAAATAAAAAATTAGCTGGGCA  
 TAGTGGTGCACACCTGTGATCCCAGCTACTTGGGAGGCTGAGGCAGGAGAATCGCTTGAACCTGG  
 GAAGCGGAGGTTGCAGTGAGCCAACATCATGCCACTGCACCTCCAGCCTGGGTGACAGAGTGAGAC  
 TTCGTCTCAACGAAAAAAGTGTAAGCCATTCCTAATTCAGTGATACATCAGTGATACATAC  
 TCAGGTCTGCGTACTCCTGCTCTGAGGCATACCTGAGAAGTAGAGTTGCTTGGTTCACAGGACATA  
 CACATTTCCACATTAAGTAGACACTACCAAGTTGCCATCCAAGGAGGTTTTTTTTTTTACAATCTA  
 CACTCCCCCAGCAACAAATGAGAGTTACTCCAGATCCTTTACAAAGATGCTCTAAGCCCAGTAC  
 CAGATGAAAACAGGAAGTGGGAGGGGAAGCTGCCAGCCCCCTTCTAACCATGAAGAAATACCTGGT  
 AGAGCCTTCTGGATGCTGGAAGGATGAATAACGGGGGTCTCTGGAGCCTGCCCCCTGTGAGATCA  
 CTGTGACTTCTGAGCCTCCAGTCCAGTCTCAGCCCCATGTGTGATGGCCAGTGATAATGAGCCCT  
 CACTCTCTGTTTGGTCTTTATTCTCCCCATGTGGGGCTGAAGTCTGGATTGAGCCGTTATTCAAG  
 ATGTACAGCTTTCTTGACAGGAAAGTAGTGTACAGAAACAGCAGGGGCTTGGCAAGATGATCTA  
 ACTGCAAATCCTACCTGGCTCAGCCACCAGCTAGTTCTGTGATCTTGAACAAGTTTTTCACTTC  
 TCTGAGGCCATCCCTTGGCTACAACACACCAAGTTGGTTGACAGGATGAAATGACGAAGTCCCTTA  
 CACCTGTAATCCCAGCACTTTGGGAGGCCAAGCGGGTGGATGGCTTGAGCCTGAGAGGTGACAG  
 CATGCCGGCAGTCTCTCAGAGCCCTCGTTGCTCTCGGCGCCTCCTCTGCCTGGGCTCCCACTTCG  
 GTGGCACTTGAGGAGCCCTTCAGCCCACCGCTGCACTGTGGGAGCCCTTTCTGGGCTGGCCAAG  
 GCCAGAGCCGGCTCCCTCAGCTTGCAAGGAGGTGTGGAGGGAGAGGCTCAAGCAGGAACCGGGGC  
 TGCGCACGGCGCTTGCGGGCCAGCTGGAGTTCCGGGTGGGCGTGGGCTTGGCGGGCCCCGCACTC  
 GGAGCAGCGGGCCAGCCCTGCCAGGCCCCGGGCAATGAGAGGCTTAGCACCCGGGCCAGCGGCTG  
 CGGAGGGTGTACTGGGTGCCCCAGCAGTGCCAGCCCCGCGCGCTGTGCTCGCTCGATTTCTCAC  
 TGGGCCTTAGCAGCCTTCCCGCGGGGCAAGGCTCGGGACCTGCAGCCCGCCATGCCTGAGCCTCC  
 CCTCCATGGGCTCCTGTGCGGCCCCGAGCCTCCCCGACGAGCACCACCCCTGCTCCACAGCGCCC  
 AGTCCCATCGACCACGCAAGGGCTGAGAAGTGCGGGCGCACGGCACCGGGACTGGCAGGCAGCTA  
 CCCCTGCAGCCCTGGTGCGGAATCCACTGGGTGAAGCCAGCTGGGCTCCTGAGTCTGGTGGAGAC  
 TTGGAGAACCCTTTATGTCTAGCTCAGGGATCGTAAATACACCAATCAGCACCCCTGTGTAGCTC  
 AGGGTCTGTGAATGCACCAATCCACACTCTGTATCTAGCTACTCTGATGGGGCCTTGGAGAACC  
 TTATGTCTAGCTCAGGGATTGTAAATACACCAATCGGCACTCTGTATCTAGCTCAAGGTTTGTAA

FIG. 5A

ACACACCAATCAGCACCCCTGTGTCTAGCTCAGGGGTATGTGAATGCACCAATCGACAGTCTGTATC  
 TGGCTACTTTTCATGGGCATCCGTGTGAAGAGACCACCAAACAGGCTTTGTGTGAGCAATAAAGCT  
 TCTATCACCTGGGTGCAGGTGGGTGAGTCCGAAAAGAGAGTCAGCGAAGGGAGATAAAGGGTGGG  
 GCCGTTTTATAGGATTTGGGTAGGTAAAGGAAATTACAGTCAAAGGGGGTTTGTCTCTGGCGG  
 GCAGGAGTGGGGGGTGCAGGTGCTCAGTGGGGGTGCTTTTTTGAGCCAGGATGAGCCAGGAAAA  
 GGACTTTCACAAGGTAATGTCATCAATTAAGGCAAGGACCCGCCATTTACACCTCTTTTGTGGTG  
 GAATGTCATCAGTTAAGTTGGGGCAGGGCATATTTACTTCTTTTGTGATTCTTCAGTTACTTCAG  
 GCCATCTGGGCGTATATGTGCAAGTTACAGGGGATGCGATGGCTTGGCTTGGGCTCAGAGGCTTG  
 ACAGCTACTCTGGTGGGGCCTTGGAGAATGTTTGTGTGACACTCTGTATCTAGTTAATCTAGTG  
 GGGACGTGGAGAACCCTTTGTGTCTAGCTCAGGGATTGTAAACGCACCAATCAGCGCCCTGTCAA  
 ACAGACCACTCGGCTCTACCAATCAGCAGGATGTGGGTGGGGCCAGATAAGAGAATAAAAGCAGG  
 CTGCCCCGAGCCAGCAGTGGCAACGCGCACAGGTCCCTATCCACAATATGGCAGCTTTGTTCTTTT  
 GCTGTTTGGGATAAATCTTGCTACTGCTCGCTTTTTTGGGTCCACACTGCTTTTATGAGCTGTAAC  
 ACTACCAACGAAGGTCTGCAGCTTCACTCCTGAAGCCACTAAGACCACGAGCCACCGGGAGGAA  
 TGAACAACCTCCGGCCGCGCTGCCTTAAGAGCTATAAACAACCTCACCGCAAGGTCTGCAGCTTCACT  
 CCTCAGCCAGCGAGACCACGAACCCACCAGAGGAAGAAACTGCGAACACATCTGAACATCAGAA  
 GGAACAAACTCCAGATGCACCACCTTAAGAGCTGTAAACACTCACTGCGAGGGTCCGCGGCTTCCT  
 TCTTGAAGTCAGTGAGACCAAGCACTCACCAGTTTTCGGACACAAGCCCAGGAGTTTGAGATCAGC  
 CTGGGCAACATGATGAAATGCCCTCTCTGCAAAAAAATAAATAAATTGGCGGAGCAT  
 GGTGGTCCGTTCCTGTGGTCCAGCTACGCGGGAGGCTAAAGTGGGAGGATCGCTTGAGCCTGGG  
 AGGTGAAGACTGCAGTGAGCTGTGATTGTACCACAGCCCTCTAGGCTGGGGGACAGACTGAGACC  
 CTGTTTCCCTCCGCAAAAAATTGACAAAAGTGTAAATAAGAGGTGCCTGATATGGCTAGGCGCA  
 GTGGCTCATGCCTGTAATCCCAGCACTTTGGGAAGCCGAGGCGGGCGGGTCACTAAGGTCAGGA  
 GTGTGAGACCAAGCTGGCCAACATGGAGAAAGCCCATCTCTTCTAAAAATACAAAATTAGCCGGC  
 TGTGGGGCAGTGGTGGAGCATGCCTGTAATCCAGCTACTCAGGAGGCTGAGGCAGGAGAAATCA  
 CTTGAACCCAGGAGGCGGCGGTGTCAGTGAGCCGAGATCGTGCCATTGCACTCCACCCACTCCAG  
 CCTGGGCAACAAGAGCCAACTCTGTCTTAAAAAAGTGCCTGACATAAAGAGG  
 TGTGCAATGCAATAGTTGCCAGGCAACATGTTTAAAGAAATGTGGAGCTCCTGCCTTCCATGGTCTT  
 GTTAAAAACCCACCTCAAGGCCAGGTGCAGTGGCTCATGCCTATAATCCCAGCACTTTGGGAGG  
 CCGAGGCGGGTGGATCACCTGAGGTGAGGATTCGAGACCAGCCTGACCACCAACATGGTGAAAT  
 CCCACCTCTACTAAAAATACAAAATTAGATGAGCATGGTGGTGCATGCCTGTAATCCCACCTACT  
 TGGGAGGCTGAGGCAGGAAAACTACTAGAACCAGGGAGGCGGAGGTTGTAGTGAGCCGAGATCGT  
 GCCATTGCACTCCAGCCTGAGCAATGAGCGAACTCCATCTCAAAAAACAACAACAAAAACCCA  
 CTCTCTACTCCCAGGGAGCTGGGTACAGAGCTGGGCCACATCAGTGCAAGGTGCTGAGCCACAGA  
 GCTAAGGCGGAGCTGCAGGACCGCGGACAGATACAGTGTGTGAGATCAGTGTGTGAGATCAGATCAGA  
 CGTCCCTGCCATTGGTGACCAACAGGGGGCCCCAACGACCCAGAGATGGCCCCATCCAGTCAACA  
 CATCCACTTCTCATCCAGAGATGTCTGTTTCTTGGCACGCTGGGGTAAATTAGGACAGAAGGTGA  
 CAGTCTTGGGTGTGGTCAGTCAGACTGCCCCAGGCAGGCCTTGTGGCCTGTAGAAAACGTTTCAGG  
 CCTAGGCCGGGCACGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCGGAGGCGGGTGGAT  
 CACGAGGTGAGGAGATCGTGACCATCCTGGCTAACACGGTGAAACCCCGTCTCTACTAAAAATAC  
 AAAAAATTGGCCGGGCATGGTGGCGGGCACCTGTAGTTCCAGCTACTCGGGAGGCTGAGGCAGGA  
 GAATGGCGTGAACCCGAGAGGCAGAGTTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAGCCT  
 GGGCGACAGAGCAAGACTCCATCTGGAAGAAAAAGAAAAAGTTTCAGGTCTGAGCCAGAGGCC  
 AGGCTGTAATTTCTGTCACTTACCATGACCTTGGGCAAGGCACTTCCCTTCCCTGGCCCCAGTTTCAG  
 GGGTTGGAATCGACTCCAAGGTCCCTTCCAGCATTAACGCTGCATGGTTCTAAGATGAGAAGATG  
 GGGCAGTTTCCCTCTCTCACCCAGCCCGTGTCCACTTCAAGGTGAATGACCAGGGAAGGTGAGC  
 TGTCCCAATCCCGCAGTTTCCAAAGCCCTTGGGACCCCTACTGTGAGGGTGTGCAACGAGGAGCTG  
 AAGGTGAGGTGAGCCAATCGCCTCGAAGGGTCTTGCCCTATTTCGGGACAGACATCCGGTTTCTCT  
 TGGCTCTACCGGATTCTAGGGGCTTTAGCCGAATGAGTCATGGGGGGCGGGGGGTTTCTGGGG  
 GAGTTCCAGCTAATCAACTTGGGACAGGACAGCCTGGAACCTTTCGATGGTGCCTATCCAAGTGT  
 GGGGTGGGCACAGCAGCCAAGACCCAATGTCCTTATCTCAGGTAGGGGCTCAGGAGGTCTCCAG  
 ACAGGCAGCCTCCGGAGAGTTTGGGGGTAGGAATGGGAGCAACCAGGCTTCTTTTTTCTCTCTT  
 AGAATTTGGGGGCTTGGGGGACAGGCTTGAGAATCCCAAAGGAGAGGGGCAAGGACACTCCCC  
 ACAAGTCTGCCAGAGCGAGAGAGGAGACCCCGACTCAGCTGCCACTTCCCCACAGGCCT

FIG. 5B

CC GGCAGTCCTC  
 ACAGCCCTCG TTCGCTCTCG GCGCCTCCTC TGCCTGGGCT CCCACTTCGG TGGCACTTGA  
 GGAGCCCTTC AGCCCACCGC TGCAGTGTGG GAGCCCCTTT CTGGGCTGGC CAAGGCCAGA  
 GCGGGCTCCC TCAGCTTGCA GGGAGGTGTG GAGGGAGAGG CTCAAGCAGG AACCGGGGCT  
 GCGCACGGCG CTTGCGGGCC AGCTGGAGTT CCGGGTGGGC GTGGGCTTGG CGGGCCCCGC  
 ACTCGGAGCA GCGGGCCAGC CCTGCCAGGC CCCGGGCAAT GAGAGGCTTA GCACCCGGGC  
 CAGCGGCTGC GGAGGGTGTA CTGGGTGCCC CAGCAGTGCC AGCCCGCCGG CGCTGTGCTC  
 GCTCGATTTT TCACTGGGCC TTAGCAGCCT TCCCGCGGGG CAGGGCTCGG GACCTGCAGC  
 CCGCCATGCC TGAGCCTCCC CTCCATGGGC TCCTGTGCGG CCCGAGCCTC CCCGACGAGC  
 ACCACCCCTT GCTCCACAGC GCCCAGTCCC ATCGACCACG CAAGGGCTGA GAAGTGCGGG  
 CGCACGGCAC CGGACTGGC AGGCAGCTAC CCCTGCAGCC CTGGTGCGGA ATCCACTGGG  
 TGAAGCCAGC TGGGCTCCTG AGTCTGGTGG AGACTTGGAG AACCTTTATG TCTAGCTCAG  
 GGATCGTAAA TACACCAATC AGCACCTGT GTCTAGCTCA GGGTCTGTGA ATGCACCAAT  
 CCACACTCTG TATCTAGCTA CTCTGATGGG GCCTTGGAGA ACCTTTATGT CTAGCTCAGG  
 GATTGTAAAT ACACCAATCG GCACTCTGTA TCTAGCTCAA GGTTTGTAAG CACACCAATC  
 AGCACCTGT GTCTAGCTCA GGGTATGTGA ATGCACCAAT CGACAGTCTG TATCTGGCTA  
 CTTTCATGGG CATCCGTGTG AAGAGACCAC CAAACAGGCT TTGTGTGAGC AATAAGCTT  
 CTATCACCTG GGTGCAGGTG GGCTGAGTCC GAAAAGAGAG TCAGCGAAGG GAGATAAGGG  
 TGGGGCCGTT TTATAGGATT TGGGTAGGTA AAGGAAAATT ACAGTCAAAG GGGGTTTGT  
 CTCTGGCGGG CAGGAGTGGG GGGTCGCAAG GTGCTCAGTG GGGGTGCTTT TTGAGCCAGG  
 ATGAGCCAGG AAAAGGACTT TCACAAGGTA ATGTCATCAA TTAAGGCAAG GACCCGCCAT  
 TTACACCTCT TTTGTGGTGG AATGTCATCA GTTAAGTTGG GGCAGGGCAT ATCACTTCT  
 TTTGTGATTC TTCAGTTACT TCAGGCCATC TGGGCGTATA TGTGCAAGTT ACAGGGGATG  
 CGATGGCTTG GCTTGGGCTC AGAGGCTTGA CAGCTACTCT GGTGGGGCCT TGGAGAATGT

**Sail**

TTGTGTGAC ACTCTGTATC TAGTTAATCT AGTGGGGACG TGGAGAACCT TTGTGTCTAG  
 CTCAGGGATT GTAAACGCAC CAATCAGCGC CCTGTCAAAA CAGACCACTC GGCTCTACCA  
 ATCAGCAGGA TGTGGGTGGG GCCAGATAAG AGAATAAAAG CAGGCTGCCC GAGCCAGCAG  
 TGGCAACGCG CACAGGTCCC TATCCACAAT ATGGCAGCTT TGTTCTTTTG CTGTTTGCGA  
 TAAATCTTGC TACTGCTCGC TTTTGGGTG CACACTGCTT TTATGAGCTG TAACACTCAC  
 CACGAAGGTC TGCAGTTCA CTCCTGAAGC CACTAAGACC ACGAGCCCAC CGGGAGGAAT  
 GAACAACTCC GGCCGCGCTG CCTTAAGAGC TATAACACTC ACCGCGAAGG TCTGCAGCTT

**FIG. 6A**



CACTCCTCAG CCAGCGAGAC CACGAACCCA CCAGAAGGAA GAAACTGCGA ACACATCTGA  
 ACATCAGAAG GAACAAACTC CAGATGCACC ACCTTAAGAG CTGTAACACT CACTGCGAGG  
 GTCCGCGGCT TCCTTCTTGA AGTCAGTGAG ACCAAGCACT CACCAGTTTC GGACACAAGC  
 CCAGGAGTTT GAGATCAGCC TGGGCAACAT GATGAAATGC CCTCTCTGCA AAAAAAAAAA  
 AAATTACAAA AATTGGCGGA GCATGGTGGT CCGTGCCTGT GGTCCTCAGT ACGCGGGAGG  
 CTAAAGTGGG AGGATCGCTT GAGCCTGGGA GGTGAAGACT GCAGTGAGCT GTGATTGTAC  
 CACAGCCCTC TAGGCTGGGG GACAGACTGA GACCCTGTTT CCCCTCCGCA AAAAAATTGA  
 CAAAAGTGTA ATAAGAGGTG CCTGATATGG CTAGGCGCAG TGGCTCATGC CTGTAATCCC  
 AGCACTTTGG GAAGCCGAGG CGGGCGGGTC ACCTAAGGTC AGGAGTGTGA GACCAGCCTG  
 GCCAACATGG AGAAAGCCCA TCTCTTCTAA AAATACAAAA TTAGCCGGCT GTGGGGGCAG  
 TGGTGGAGCA TGCTGTAAAT CCCAGCTACT CAGGAGGCTG AGGCAGGAGA ATCACTTGAA  
 CCCAGGAGGC GCGGTTGCA GTGAGCCGAG ATCGTGCCAT TGCACTCCAC CCACTCCAGC  
 CTGGGCAACA AGAGCCAAAC TCTGTCTTAA AAAAAAAAAA AAAAAGTGCC TGACATATAA  
 GAGGTGTGCA ATGCAATAGT TGCCAGGCAA CATGTTTAAG AATGTGGAGC TCCTGCCTTC  
 CATGGTCCTG TTAAAAACCC ACCCTCAAGG CCAGGTGCAG TGGCTCATGC CTATAATCCC  
 AGCACTTTGG GAGGCCGAGG CGGGTGGATC ACCTGAGGTC AGGAGTTCGA GACCAGCCTG  
 ACCACCAACA TGGTGAAATC CCACCTCTAC TAAAAATACA AAATTAGATG AGCATGGTGG  
 TG

FIG. 6B

CCTG TAATCCCACC TACTTGGGAG GCTGAGGCAG GAAAATCACT AGAACCAGGG  
 AGGCGGAGGT TGTAAGTGAGC CGAGATCGTG CCATTGCACT CCAGCCTGAG CAATGAGCGA  
 AACTCCATCT CAAAAAACA ACAACAAAA CCCACTCTCT ACTCCCAGGG AGCTGGGTAC  
 AGAGCTGGGC CACATCAGTG CAAGGTGCTG AGCCACAGAG CTAAGGCGGA GCTGCAGGAC  
 CGCGGACCAG ATAACAGTGT GTGAGATCAG TGTGTGAGAT CAGACGTCCC TGCCATTGGT  
 GACCACCAGG GGGCCCCAA GCACCAGAGA TGGCCCCATC CAGTCACCAC ATCCACTTCT  
 CATCCAGA GA TGTCTGTTT TTGGCACGCT GGGGTAAATT AGGACAGAAG GTGACAGTCT  
 -1457 TGGGTGTGGT CAGTCAGACT GCCCCAGGCA GGCCTTGTGG CCTGTAGAAA ACGTTCAGGC  
 -1397 CTAGGCCGGG CACGGTGGCT CACGCCTGTA ATCCCAGCAC TTTGGGAGGC CGAGGCCGGT  
 -1337 GGATCACGAG GTCAGGAGAT CGTGACCATC CTGGCTAACA CCGTGAAACC CCGTCTCTAC  
 -1277 TAAAAATACA AAAAATTGGC CGGGCATGGT GCGGGGCACC TGTAGTTCCA GCTACTCGGG  
 -1217 AGGCTGAGGC AGGAGAATGG CGTGAACCCG AGAGGCAGAG TTTGCAGTGA GCCGAGATCG  
 -1157 CGCCACTGCA CTCCAGCCTG GCGACAGAG CAAGACTCCA TCTGGAAAAG AAAAAGAAAA  
 -1097 CGTTCAGGTC TGAGCCAGAG GCCCAGGCTG TAATTCTGTC ACTTACCATG ACCTTGGGCA  
 -1037 AGGCACTTCC TTCCCTGGCC CAGTTCACGG GGTGGAATC GACTCCAAGG TCCCTTCCAG  
 -977 CATTACGCT GCATGGTTCT AAGATGAGAA GATGGGGCAG TTTCCCTCT CTCACCCAG  
 -917 CCCGTGTCCA CTTCAAGGTG AATGACCAGG GAAGTCACGT GTCCCAATCC CGCAGTTCCA  
 -857 AAGCCCTTGG GGACCCTACT GTCAGGGTCG TGCACGAGGA GGTGAAGGTC AGGTGAGCCA  
 -797 ATCGCCTCGA AGGGTCTTGC CTCATTCGGG ACAGACATCC GGTTTCTCT GGCTCTACCC  
 -737 GGATTCTAGG GGCTTTAGCC GAATGAGTCA TGGGGGGCGG GGGGGTTTCT GGGGGAGTTC  
 -677 CCAGCTAATC AACTTGGGAC AGGACAGCCT GGAACCTTCG ATGGTGCCTA TCCAAGTG

Xcml

FIG. 7